

Claims:

1. A functional liquid-solid additive system comprising:

a) a functional liquid component, the functional liquid component comprising a functional liquid additive, and

b) a functional solid component, the functional solid component comprising polymeric additive particles, the polymeric additive particles comprising:

(i) a first population of polymer particles, and

(ii) a second population of polymer particles.

2. A functional liquid-solid additive system as recited in claim 1 wherein the functional liquid component is present in an amount of at least 1 weight percent, said weight percentage being based on the total weight of the functional liquid-solid additive system.

3. A functional liquid-solid additive system as recited in claim 1 wherein the functional liquid component comprises at least 5 weight percent water, said weight percentage being based on the total weight of the functional liquid-solid additive system's functional liquid component.

4. A functional liquid-solid additive system as recited in claim 1 wherein the functional liquid component comprises at least one liquid from the following group: organic solvents, alcohols, esters, plasticizers, emulsion stabilizers, defoamers, leveling agents, biocides, mildewicides, fungicides, UV stabilizers, lubricants, oils, dyes, rheology modifiers, thermal stabilizers, co-stabilizers, antioxidants, mold release agents, oligomers, monomers, crosslinkers, graftlinkers, curing agents, reactants, and liquid polymeric additives.

5. A functional liquid-solid additive system as recited in claim 1 wherein the functional liquid component comprises essentially no water.

6. A process for making a functional liquid-solid additive system, the functional liquid-solid additive system comprising a functional liquid component and a functional solid component, wherein the functional solid component comprises polymeric additive particles, said process comprising at least the following steps:

- (a) providing an aqueous emulsion polymerization reaction mixture comprising a first population of polymer particles and a second population of polymer particles;
- (b) polymerizing a first group of one or more ethylenically unsaturated monomers in the aqueous emulsion polymerization reaction mixture; and
- (c) providing a functional liquid additive, wherein said functional liquid additive is mixed with said first and second populations of polymer particles.

7. A process for making a functional liquid-solid additive system as recited in claim 6, wherein the aqueous emulsion polymerization reaction mixture is provided by mixing a first dispersion comprising the first population of polymer particles with a second dispersion comprising the second population of polymer particles.

8. A process for making a functional liquid-solid additive system as recited in claim 6, further comprising the step of:

- (d) graft-polymerizing a second group of one or more ethylenically unsaturated monomers in the presence of the first and second

populations of polymer particles to provide a polymer adjacent to the surfaces of the polymer particles of the first and second populations, wherein the second group of one or more ethylenically unsaturated monomers are the same or different as the first group of one or more ethylenically unsaturated monomers of step (b).

9. A process for making a functional liquid-solid additive system as recited in claim 8, wherein the first group of monomers forms a rubbery core polymer and the second group of monomers forms a hard shell polymer.

10. A process for making a functional liquid-solid additive system as recited in claim 9, wherein the rubbery core polymer is present in an amount of from 80 to 99 weight percent, said weight percentage being based on the total weight of the rubbery core and hard shell polymers.

11. A polymeric composition comprising a polymeric component, a functional liquid additive component, and a functional solid additive component, wherein said polymeric composition is prepared by a process which comprises at least the following steps:

(I) forming a blend comprising the polymeric component and at least one functional liquid-solid additive system, wherein the functional liquid-solid additive system comprises:

a) a functional liquid component, the functional liquid component comprising a functional liquid additive, and

b) a functional solid component, the functional solid component comprising polymeric additive particles, the polymeric additive particles comprising:

(i) a first population of polymer particles, and

(ii) a second population of polymer particles.

12. A polymeric composition prepared by the process as recited in claim 11, wherein the functional solid component is present in an amount of at least 1 weight percent, said weight percentage being based on the total weight of the functional liquid-solid additive system.

13. A polymeric composition prepared by the process as recited in claim 11, wherein the functional liquid component comprises at least 5 weight percent water, said weight percentage being based on the total weight of the functional liquid-solid additive system's functional liquid component.

14. A polymeric composition as prepared by the process as recited in claim 11, wherein the mean particle diameter of the first population of particles is at least 50% larger than the mean particle diameter of the second population of particles.

15. A polymeric composition prepared by the process as recited in claim 11, wherein the functional liquid component is present in an amount of at most 99 weight percent, said weight percentage being based on the total weight of the functional liquid-solid additive system.

16. A process for making a polymeric composition comprising a polymeric component, a functional liquid additive component, and a functional solid additive component, said process comprising at least the following steps:

(I) contacting the polymeric component with a functional liquid-solid additive system to form a blend, the functional liquid-solid additive system comprising:

a) a functional liquid component, the functional liquid component comprising a functional liquid additive, and

b) a functional solid component, the functional solid component comprising polymeric additive particles, the polymeric additive particles comprising:

(i) a first population of polymer particles, and

(ii) a second population of polymer particles,

and

(II) removing at least a portion of the functional liquid component from the blend.

17. A process for making a polymeric composition as recited in claim 16, wherein step (I) the functional liquid component is present in an amount of at most 99 weight percent, said weight percentage being based on the total weight of the functional liquid-solid additive system.

18. A process for making a polymeric composition as recited in claim 16 wherein, after forming the blend, the blend is formed into an article.

19. A process for making a polymeric composition as recited in claim 16 wherein the polymeric component is in powder form.

20. A process for making a polymeric composition as recited in claim 16 wherein the polymeric additive particles comprise at least 10 percent by weight of a rubbery core.